



Department of Local Government Finance

Cost Approach

Part B

2020 Level 1 Tutorials



Chapter 2

- Residential acreage parcels of more than one acre and not used for agricultural purposes are valued using the residential homesite base rate and the excess acreage base rate established by the township assessor, if any, otherwise the county assessor.





Chapter 2

- A land area of one acre per residential dwelling unit is assigned to agricultural parcels and residential parcels priced on an acreage basis.





Chapter 2

- Calculating Farm land values
- In order to compute the value of farmland, you need to record the information for each land area, by Soil ID and use Type 2 through Type 7.
- Then you calculate the land value for each land area.





Chapter 2

- Total the values of all of the different areas listed to determine the land value.
- The next step is to record information about Type 8 and/or Type 9 land.
- To calculate the value of the farmland, you divide the Total Farmland Value by the Total Measured Acres.
- This gives you an average value that you apply to the parcel acreage





Chapter 2

- You then need to value the classified land, a homesite (if there is one on the property) and the excess acres, if any.
- These numbers are then carried to the front of the card.





Chapter 2

- Agricultural Land Types
 - Type 2 – Classified land
 - Type 4 – Tillable land
 - Type 5 – Non-tillable land
 - Type 6 – Woodland
 - Type 7 – Other farmland
 - Type 8 – Agricultural support land
 - Type 9 – Homesite





Agricultural Land

- For this example there is a 40 acre tract to be valued. 18.22 acres have a soil productivity factor of 0.89. 4.05 acres have a productivity factor of 0.89. 4.86 acres have a productivity factor of 0.77 and the remaining 12.87 acres have a productivity factor of 1.11. You are to arrive at the Land Value rounded to the nearest \$10. All of the acres are tillable. The base rate of farmland for this example is \$1,560.





Agricultural PRC

LAND DATA AND COMPUTATIONS											
Land Type	Soil ID.	Measured Acres	Productivity Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Land Value	Parcel Acreage		40.00
									81 Legal Drain NV	[-]	
									82 Public Road NV	[-]	
									83 UT Towers NV	[-]	
4	BKB2	18.22	0.89	\$1,560	\$1,388	\$25,290		\$25,290	9 Homesite(s)	[-]	
4	DEA	4.05	0.89	\$1,560	\$1,388	\$5,620		\$5,620	92 Ag. Excess Acres	[-]	
4	GNB2	4.86	0.77	\$1,560	\$1,201	\$5,840		\$5,840	TOTAL ACRES FARMLAND		40.00
4	PM	12.87	1.11	\$1,560	\$1,732	\$22,290		\$22,290	Farmland Value		\$59,040
					\$0	\$0		\$0	Measured Acreage		40.00
					\$0	\$0		\$0	Average Farmland Value/Acre		\$1,476.00
					\$0	\$0		\$0	VALUE OF FARMLAND		\$59,040
					\$0	\$0		\$0	Classified Land Total		
					\$0	\$0		\$0	Total Farmland / Classified Land Value		\$59,000
					\$0	\$0		\$0			
					\$0	\$0		\$0	Homesite(s)		[+]
					\$0	\$0		\$0	92 Ag. Excess Acres		[+]
					\$0	\$0		\$0	LAND TYPE		
					\$0	\$0		\$0	F-Front Lot	3-Undeveloped Land	8-Ag Support Lar
					\$0	\$0		\$0	R-Rear Lot	4-Tillable Land	8 1-Legal Ditch
					\$0	\$0		\$0	1-Comm/Ind Land	5-Non-Tillable Land	82-Public Road
					\$0	\$0		\$0	2-Classefied Land	6-Wood Land	83-Utility Trans
					\$0	\$0		\$0	2 1-Classefied Forest	7-Other Farmland	Towers
					\$0	\$0		\$0	22-Wild life Habitat	71-Faem Buildings	9-Homesite
					\$0	\$0		\$0	23-Reparian Land	72-Water	9 1-Res. Excess
					\$0	\$0		\$0	24-Windbreak	73-Wetlands	Acres
					\$0	\$0		\$0	25-Filter Strip		92-Ag. Excess
Supplemental Card							Supplemental Card				
Measured Acreage		40.00					LAND VALUE	\$59,040			
									Acres		





Chapter 2

- Oil and gas interests are subject to assessment and taxation as real property annually by the township assessor, if any, otherwise the county assessor.
- The oil or gas interest is assessed to the person who owns or operates this interest.
- The total assessed value of an oil or gas interest is calculated as follows:
 - The average daily production x 365 x the posted price on the assessment date





Chapter 2

- For example, if you have an oil interest where the average daily production is 20 barrels per day, the assessed value would be:
 - $20 \times 365 \times \$28.35$ (where the \$28.35 is the price on the assessment date) = \$206,955 or \$207,000.
 - The \$207,000 assessment would then be apportioned to the owners by the percentage of interest that they have.





Chapter 2

- The Department updates the values for oil and gas and includes them in the pricing memo that is issued each year on January 1
- Any equipment (such as the pump) is an appurtenance to the land and is assessed annually as real property to the person who owns or operates the interest.
- Cost of appurtenances per well are updated each year on January 1. A memo will be issued on or about January 1 of each year and can be found on our website. (Note: this has change from March 1st to January 1st beginning in 2016 to coincide with SEA 420)





Chapter 2

- In dealing with land, you need to understand how to read a legal description.
- Land is measured in sections (640 acres); quarter sections (160 acres); and smaller divisions (quarter quarter sections, etc.)





Chapter 2

- In order to read a legal description, you start at the far right of the description and read left, dividing by the denominator of the fraction for each division.
- For example, a legal description of NW $\frac{1}{4}$ is 640 acres divided by 4 or 160 acres.





Chapter 2

- A legal description of NE $\frac{1}{4}$ SE $\frac{1}{4}$ would contain 40 acres (640 divided by 4 = 160; 160 divided by 4 = 40)
- A legal description of E $\frac{1}{2}$ NW $\frac{1}{4}$ would contain 80 acres (640 divided by 4 = 160; 160 divided by 2 = 80)





Chapter 2

- Just remember to start on the far right side, read to the left and divide by the denominator of the fraction.
- How many acres would the following contain:
 - $NE\frac{1}{4}$ $E\frac{1}{2}$ $SW\frac{1}{4}$ $SW\frac{1}{4}$





Chapter 2

$NE\frac{1}{4}$ $E\frac{1}{2}$ $SW\frac{1}{4}$ $SW\frac{1}{4}$

- Work the math:
- 640 divided by 4 = 160
- 160 divided by 4 = 40
- 40 divided by 2 = 20
- 20 divided by 4 = 5
- So, the parcel contains 5 acres





Chapter 2

- Refer to Page 84 in Chapter 2 for a guide on how to locate the various quarter sections and smaller divisions.



For problems 7, 8, and 9, assume a Homesite value of \$10,000, an excess acreage value of \$2,500 per acre and a farmland value of \$1,560 per acre with a productivity factor of 1.05.

- Number 7: A residential parcel contains 4 acres and is vacant. What is the estimated value of this parcel?
- Number 8: A residential parcel contains 10 acres and has a dwelling. Seven of the acres are being farmed. What is the estimated value of this parcel?
- Number 9: A residential parcel contains 5 acres, and has no dwelling. It is being farmed until construction on a new home starts. What is the estimated value of this parcel?



For problems 7, 8, and 9, assume a Homesite value of \$10,000, an excess acreage value of \$2,500 per acre and a farmland value of \$1,560 per acre with a productivity factor of 1.05.

Number 7: A residential parcel contains 4 acres and is vacant. What is the estimated value of this parcel?

Since this parcel is vacant, you multiply the excess acreage rate of \$2,500 by the number of acres. (\$2,500 X 4).
The estimated value of the parcel is \$10,000.

Number 8: A residential parcel contains 10 acres and has a dwelling. Seven of the acres are being farmed. What is the estimated value of this parcel?

		A	B	C	D	E			
Land Type	Soil ID	Meas Acres	Prod Factor	Base Rate	Adj Rate	Ext Value	Infl Factor	Land Value	
4	RAH 1	7	1.05	\$1,560	\$1,638	\$11,470		\$11,470	
								\$0	
1 acre for homesite		1			\$10,000	\$10,000		\$10,000	
2 acres excess		2			\$2,500	\$5,000		\$5,000	
		GRAND TOTAL						\$26,470	\$26,500

B TIMES C EQUALS D
A TIMES D EQUALS E

Number 9: A residential parcel contains 5 acres, and has no dwelling. It is being farmed until construction on a new home starts. What is the estimated value of this parcel?

Land Type	Soil ID	Meas Acres	Prod Factor	Base Rate	Adj Rate	Ext Value	Infl Factor	Land Value	
4	RAH1	5	1.05	\$1,560	\$1,638	\$8,190		\$8,190	
								\$0	
Homesite						\$0		\$0	
Excess Acres						\$0		\$0	
		GRAND TOTAL						\$8,190	\$8,200



Level I
Cost Approach
Practice Problem # 2
Farm Ground Pricing

You are given the following information: You are valuing a 183 acre tract. There are 7 acres with a productivity factor of 1.04. 10 acres with productivity factor of .91. 30 acres with a productivity factor of 1.07. 4 acres with a productivity factor of .96 and the remaining 132 acres has a productivity factor of 1.02. You are to arrive at the Land Value rounded to the nearest \$10. All of the acres are tillable. The base rate of farmland for this problem is \$1,560.

Land Type	Soil I.D.	Measured Acres	Productivity Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Land Value
Supplemental Card							Supplemental Card	
Measured Acreage							LAND VALUE	

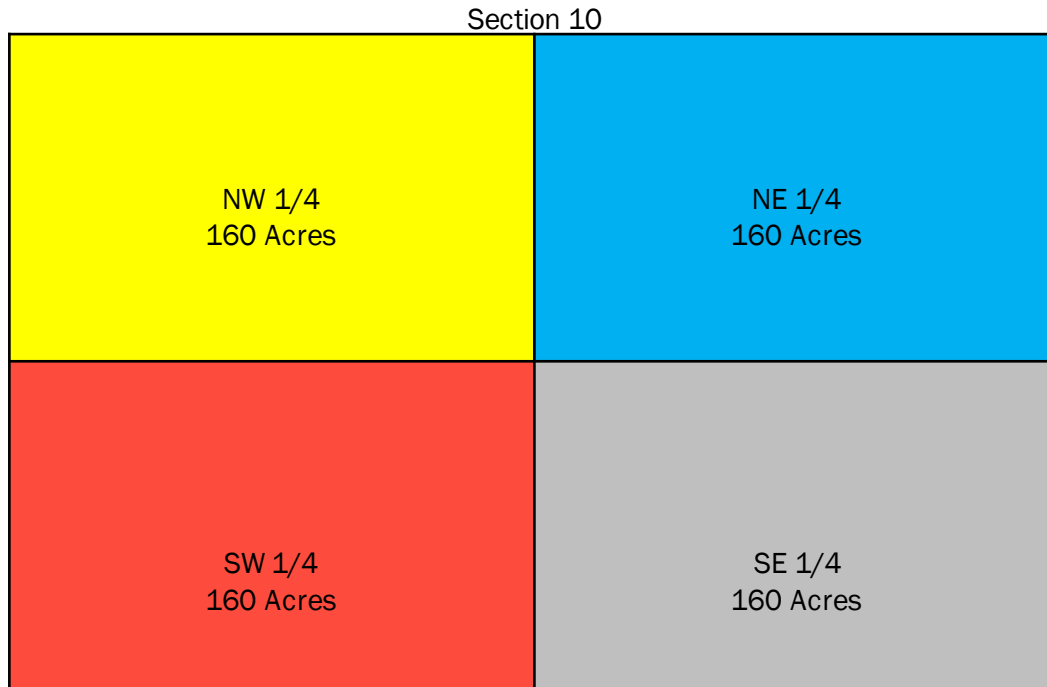


Level I
Cost Approach
Practice Problem # 2 Answer
Farm Ground Pricing

		A	B	C	D	E		F
Land Type	Soil I.D.	Measure d Acres	Productivit y Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Land Value
4		7.00	1.04	\$1,560	\$1,622	\$11,350		\$11,350
4		10.00	0.91	\$1,560	\$1,420	\$14,200		\$14,200
4		30.00	1.07	\$1,560	\$1,669	\$50,070		\$50,070
4		4.00	0.96	\$1,560	\$1,498	\$5,990		\$5,990
4		132.00	1.02	\$1,560	\$1,591	\$210,010		\$210,010
Supplemental Card							Supplemental Card	
Measured Acreage		183.00					LAND VALUE	\$291,620



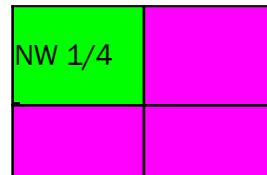
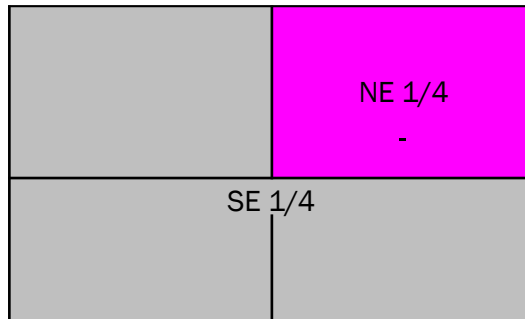
Level I
Cost Approach
Practice Problem # 4
Combination Legal Description and Depth Chart Calculations



NW1/4 NE1/4 SE1/4 OF SECTION 10

READ DESCRIPTION FROM RIGHT TO LEFT
ALL 4 QUARTERS EQUALS 640 ACRES

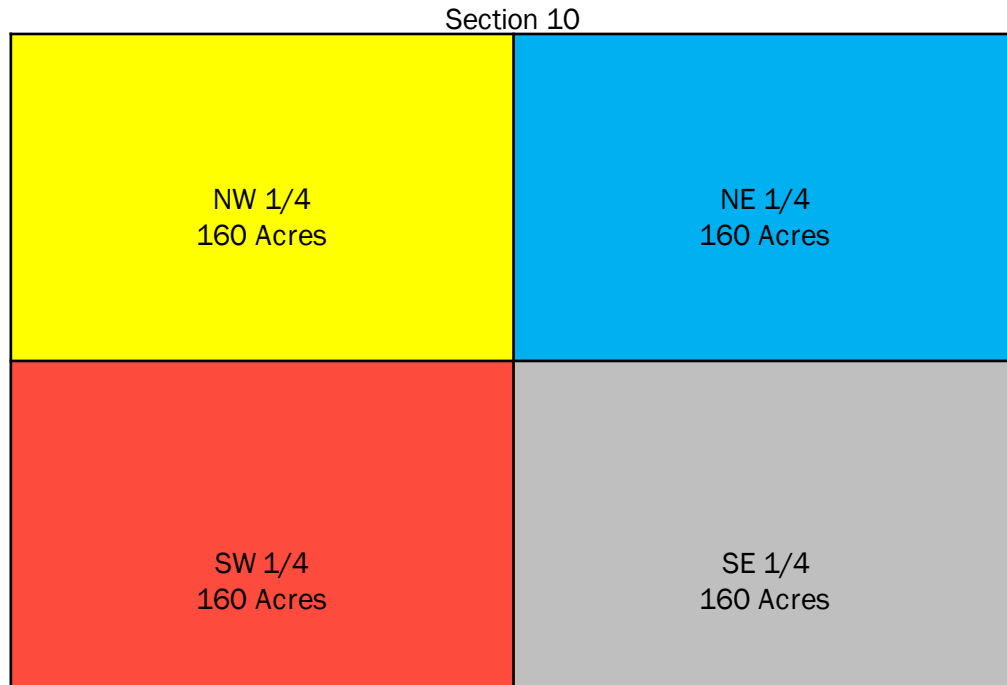
- 1.) HOW MANY ACRES IN THE ABOVE DESCRIPTION?
- 2.) HOW MANY SQ. FT. IN THE ABOVE DESCRIPTION?



NW 1/4 NE 1/4 SE 1/4



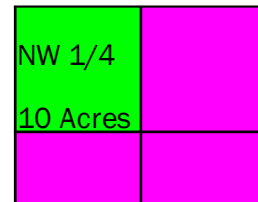
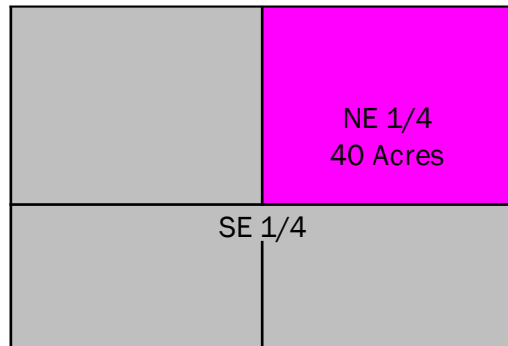
Level I
Cost Approach
Practice Problem # 4 Answer
Combination Legal Description and Depth Chart Calculations



NW1/4 NE1/4 SE1/4 OF SECTION 10
READ DESCRIPTION FROM RIGHT TO LEFT

ALL 4 QUARTERS EQUALS 640 ACRES

- 1.) HOW MANY ACRES IN THE ABOVE DESCRIPTION?
- 2.) HOW MANY SQ. FT. IN THE ABOVE DESCRIPTION?



NW 1/4 NE 1/4 SE 1/4

- 1.) 10 Acres
- 2.) 435,600 Square Feet



Level I
Cost Approach
Practice Problem # 4 (A)

Depth Chart Problem

For depth table calculations
Chapter 2

- | | |
|---------|--|
| First | Determine what the standard depth is. |
| Second | Find that table |
| Third | Find the factor in that table that relates to the depth of the lot you are pricing |
| Fourth | Take that factor and multiply it times the front foot price that is given to you |
| Fifth | This gives you the adjusted rate |
| Sixth | Take this times the front foot of the lot you are pricing |
| Seventh | This gives you the price of the lot |

Example:

Standard lot size is 125 X 132
Lot we are pricing is 125 X 150
Front foot price is \$150
Adjusted front foot price is
Lot value is



Level I
Cost Approach
Practice Problem # 4 (A)

Depth Chart Problem Answer

For depth table calculations
Chapter 2

First	Determine what the standard depth is.	132'
Second	Find that table	Chapter 2
Third	Find the factor in that table that relates to the depth of the lot you are pricing	1.06
Fourth	Take that factor and multiply it times the front foot price that is given to you	1.06 times \$150
Fifth	This gives you the adjusted rate	\$159
Sixth	Take this times the front foot of the lot you are pricing	\$159 Times 125
Seventh	This gives you the price of the lot	\$19,875

Example:

Standard lot size is 125 X 132
Lot we are pricing is 125 X 150
Front foot price is \$150
Adjusted front foot price is
Lot value is

$$\begin{array}{r} \$159 \\ \hline \$19,875 \end{array}$$

Round to nearest \$100

$$\underline{\$19,900}$$





Chapter 3

Residential Dwelling Units





Chapter 3

- In order to understand the process of valuing residential units, you need to understand the following concepts:
 - Measuring and calculating floor areas
 - Determining the story description
 - Categorizing a dwelling unit's garage or carport
 - Labeling the sketch of a dwelling unit





Chapter 3

- When gathering data to assess a residential dwelling you must:
 - Gather general information with the occupant's assistance, if possible
 - Gather information about the interior
 - Take the necessary measurements
 - Assess the general characteristics
 - Review the data before you leave





Chapter 3

- General information:
 - Record the address
 - Check exterior components (foundation, walls and roof)
 - Determine the age of the dwelling
 - Determine number of rooms per floor





Chapter 3

- Information about interior:
 - How many stories and how finished
 - Quality of construction
 - General condition of dwelling
 - Basement/attic – any improvements and degree of finish
 - Crawl space – determine size





Chapter 3

- Measuring:
 - Measure dwelling and sketch it on the property record card as closely as possible to the proportions
 - Note any exterior features (deck, porch, etc.) and sketch and label
 - Garage – what kind, if any
 - Make sure measurements of opposite sides are equal





Chapter 3

- Assessing the General Characteristics:
 - Establish idea of proper grade
 - Determine the condition
 - View dwelling from distance to get overall view
 - Depreciation





Chapter 3

- Story descriptions and Garage types are found in Chapter 3.
- When you record the physical characteristics of the dwelling on the property record card, use abbreviations and symbols.





Chapter 3

- Table 3-5 has Occupancy Options
- Table 3-6 has Story Height Options
- Table 3-7 has Attic Options
- Table 3-8 has Basement Options
- Table 3-9 has Crawl Space Options





Chapter 3

- The following is not in your book:
 - Exterior Wall Types:
 - (1) Frame or Equal:
 - Type 1 – Frame (wood siding) or Aluminum
 - Type 2 – Stucco (either on wood frame or masonry)
 - Type 3 – Tile
 - Type 4 – Concrete block
 - Type 5 – Metal





Chapter 3

- (2) Brick or Equal:
 - Type 6 – Concrete
 - Type 7 – Brick
 - Type 8 – Stone
 - These correspond with the construction codes contained on the property record card. They are located on the back of the card in the top left hand corner. We will use these later when we place values on properties. They determine which column we use to get the value from Schedule A of Appendix C.





Chapter 3

- Table 3-10 contains the Mixed Frame and Masonry Wall Construction Codes
 - If a story has a mixture of similar exterior wall type materials such as frame (codes 1 through 5) or masonry (codes 6 through 8) on the sides or ends, you would use the codes from Table 3-10. Code 9 would be used for mixed frame and masonry exterior wall construction and requires a two digit code. The second digit identifies the number of increments of masonry.
 - This relates to the + column of the pricing schedule for residential dwellings in Appendix C, Schedule A.
 - It applies to each story of a multi-story structure.
 - If the construction is a Code 9, you would need to determine how many increments of brick are in the construction.
 - Example: If a one-story dwelling has brick on both ends but none on the front or back, then there would be 2 increments of brick a.k.a. Code 92.





Chapter 3

- Table 3-11 contains the Basement Recreation Room Codes
 - Use this if there is a basement recreation room
 - Ties back to the pricing schedule (Appendix C, Schedule C)





Chapter 3

- If the dwelling has an attic:
 - If it is unfinished, use the “Unfin Attic” column and the square feet of the attic to determine the value to use.
 - If it is finished, then you need to pick up both the value for unfinished and the value in the “Attic Fin” column, and add them together to determine the correct value to use.





Chapter 3

- If the dwelling has a basement:
 - If it is unfinished, use the “Unfin Bsmt” column and the square feet of the basement to determine the value to use.
 - If it is finished, then you need to pick up both the value for unfinished and the value in the “Bsmt Fin” column, and add them together to determine the correct value to use.





Chapter 3

- A basement containing finish consistent with the remainder of the dwelling is considered as a finished basement. This is normally defined as basement living quarter.
- An area having finish inconsistent with the remainder of the dwelling is considered as a basement recreation room.





Chapter 3

- If the dwelling has a crawl space, use the square footage of the space and the “Crawl” column to determine the value to use.





Chapter 3

- Interior Features:
 - Schedules C (Appendix C), D (Appendix C) and E.1 (Appendix C)
 - Schedule C contains:
 - Deductions for unfinished interior, no central heating and no electricity
 - Additions for central air conditioning, basement recreation rooms and lofts





Chapter 3

- If the dwelling has an unfinished interior, use Schedule C to determine the appropriate deduction.
- This deduction includes an adjustment for heating, so you do not need to make any additional adjustment for that.





Chapter 3

- If there is no central heating system, use Schedule C to determine the appropriate deduction.
- If there is no electrical service, use Schedule C to determine the appropriate deduction.





Chapter 3

- If there is a central air conditioning system, use Schedule C to determine the appropriate addition.
- If there is a basement recreation room, use Schedule C to determine the appropriate addition, based on the type





Chapter 3

- If the dwelling has a loft, use Schedule C to determine the appropriate addition.
- If the dwelling does not have plumbing, has water service only, or has fewer than five plumbing fixtures, use Schedule D to determine the appropriate deduction.





Chapter 3

- Schedule D (Appendix C) contains:
 - Additions or deductions for plumbing features and fixtures
- If the dwelling contains specialty plumbing fixtures (sauna bath, steam bath, whirlpool, or a bathtub with jet or steam conversion) use Schedule D to determine the appropriate addition.





Chapter 3

- Schedule E.1 (Appendix C) contains:
 - Fireplaces – either masonry or prefab steel
- If there are fireplaces, use Schedule E.1 to determine the appropriate addition, based on the type of fireplace and the number of openings.





Chapter 3

- Exterior Features:
 - Priced from Schedule E.2 (Appendix C)
 - Exterior Features include:
 - Patios, canopies, stoops, porches, bay windows, decks, balconies, etc.
 - Based on square footage.





Chapter 3

- Exterior Features:
 - If the dwelling has an attached, basement or integral garage or an attached carport, use Schedule E.2 (Appendix C) – Garages and Carports to determine the appropriate addition or deduction.





Chapter 3

- Detached garages and carports are considered residential yard structures and are valued in the “Summary of Improvements” section of the property record card.
(Appendix C)





Chapter 3

- Assign the appropriate grade and grade factor percentage to the dwelling unit (Table A-2 in Appendix A, or Schedule F Appendix C)
- Assign the appropriate location multiplier to the dwelling (Table C-1, Appendix C)





Chapter 3

- Table 3-12 (Chapter 3) explains the Condition Ratings
- If you have solar heating and cooling systems or geothermal heating and cooling systems, consult Chapter 3 for an explanation on how to collect the data and how they are valued.





Chapter 3

- Schedule G.1 in Appendix C lists cost information for many residential yard improvements.
- Items such as utility sheds, tennis courts, and other yard items.
- Schedule G.2 in Appendix C lists cost information for agricultural yard improvements.
- Note: we will not be pricing agricultural yard improvements in this class.

